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10/669,120

09/22/2003

J. Lyell Ginter

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EXAMINER

FREAY, CHARLES GRANT

ART UNIT

PAPER NUMBER

3746

MAIL DATE

DELIVERY MODE

08/27/2009

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/669,120	Applicant(s) GINTER ET AL.	
	Examiner Charles G. Freay	Art Unit 3746	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 18 December 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-26, 28-66 and 75-284 is/are pending in the application.
- 4a) Of the above claim(s) 86-284 is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-26, 28-51, 62-66 and 75-85 is/are allowed.
- 6) ☒ Claim(s) 52-61 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>4/2009</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

This office action is in response to the Amendment and the Supplemental Declaration of December 18, 2008. In making the below rejections the examiner has considered and addressed each of the applicant's arguments.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 52-61 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The claims are vague and indefinite because claim 52 lines 22-25 set forth that the dwell time of the hot gas stream is *controlled* to cause substantially full combustion. This phrase is unclear because there is no mechanism for varying or adjusting the dwell time within the combustor. The combustor is a fixed geometry device. There is no teaching of how to control the dwell time within the combustor to cause full combustion.

Claim 56 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The claims is vague and indefinite because it sets forth that the water is injected into the combustor at a temperature of 700 to 2450 degrees Fahrenheit

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while still being in the form of a liquid (Claim 52 the first line of paragraph c).

Water cannot be at these temperatures while still being in a liquid form.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of

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35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 52-54 and 59 are rejected under 35 U.S.C. 103(a) as being unpatentable over Berlyn (USPN 3,708,976).

Berlyn discloses a combustor and makes obvious a process of operating the combustor to create a working fluid with enhanced power generating capacity. There being a combustor 19, an ignition source 25, a fuel injector 23 and an air source 11 where the fuel and air are provided at stoichiometric conditions (col. 1 lines 64-65). Water is provided as a liquid thermal diluent which is evaporated rapidly in the combustor to control the outlet temperature to be about 842 degrees Fahrenheit (450 degrees Celsius). Berlyn does not disclose that the process is continued until a need for the working fluid ceases to exist or that performing the steps maximizes carbon dioxide formation. Berlyn also does not mention the specific fuel. At the time of the invention it would have been obvious to one of ordinary skill in the art to perform the process only until the need for working fluid is present so as not to waste valuable fuel.

With regards to the limitation of carbon dioxide formation the examiner notes that Berlyn is performing the same process with the same fuel, thermal diluent and oxidizer and will inherently maximize carbon dioxide formation as claimed.

With regards to claim 59 the examiner gives official notice that gasoline and diesel fuel are well known fuels and that it would have been obvious to utilize such a fuel in order to use a readily available mass produced fuel.

Claims 52-55 and 57-60 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cheng (USPN 4,128,994)).

Cheng discloses a combustor and makes obvious a process of operating the combustor to create a working fluid with enhanced power generating capacity. There being a combustor 16 within which fuel and air are ignited, a fuel injector 18 and an air source 14 where the fuel and air are provided at stoichiometric conditions (col. 5 line 8). Water is provided (see col. 6 lines 65-66 and wet steam col. 7 line 13) as a liquid thermal diluent in the correct amount (col. 8 line 7) which is evaporated rapidly in the combustor to control the outlet temperature to be about 2150 degrees F. Cheng also notes that the water is injected to control combustor exit temperature (col. 7 lines 20-24). Cheng mentions at col. 4 that fuel consumption is maximized and that horse powers in the range of 330 to 760 are obtained. Cheng sets forth at col. 8 lines 17-32 that a variety of hydrocarbon fuels and fuel cases could be used. Cheng also sets forth that the temperature of the water is raised 24 before being injected using the working fluid exiting the turbine 28. Cheng does not disclose that the process is continued until a need for the working fluid ceases to exist or that performing the steps maximizes carbon dioxide formation. Cheng also does not mention the specific fuel. At the time of the invention it would have been obvious to one of

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ordinary skill in the art to perform the process only until the need for working fluid is present so as not to waste valuable fuel. Cheng also does not mention the specific fuel efficiency of about 42% or the specific fuel consumption.

With regards to the limitation of carbon dioxide formation the examiner notes that Cheng is performing the same process with the same fuel, thermal diluent and oxidizer and will inherently maximize carbon dioxide formation as claimed.

With regards to claim 59 the examiner gives official notice that methane and natural gas are well known fuels for turbine engines and that it would have been obvious to utilize such a fuel in order to use a readily available mass produced fuel.

With regards to claims 58 and 60 the examiner notes that it is well settled in the art that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. In re Aller, 105 USPQ 233 such that one of ordinary skill in the art would have been able to select a specific fuel and determine the correct optimized values as set forth on the claims based upon the fuel selected.

Double Patenting

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined

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application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 52-55, 57, 60 and 61 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1, 2, 5, 6, 10, 13-15, 17 and 22 of U.S. Patent No. 5,743,080 (Ginter '080), and also over claims 1, 2, 6, 8, 9, 12, 16 and 18-21 of U.S. Patent No. 5,617,719 (Ginter '719) in view of Cheng. Review of the claims in Ginter '080 and Ginter '719 discloses that a process for stoichiometrically combusting a fuel air mixture and delivering it to a turbine is disclosed. Each of the Ginter references furthermore teach injecting and controlling the amount of water injected into the combustor which is then evaporated to control the outlet temperature of the created working fluid to a desired maximum temperature of the turbine and also collecting the inorganic solids from the combustion chamber. The Ginter references do not disclose controlling the temperature of the injected thermal diluent/water of the step of continuing the method until the need for working fluid does not exist. As set forth in the above rejection Cheng discloses a similar combustion apparatus an

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process where water is injected to control the temperature of the working fluid exiting the combustor. The Cheng references further discloses a mechanism 24 for controlling and adjusting the temperature of the thermal diluent before it enters the combustor. At the time of the invention it would have been obvious to one of ordinary skill in the art to utilize a mechanism such as taught by Cheng in either of the Ginter references as a means for optimizing the temperature of the thermal diluent and thus providing another degree of control for obtaining the correct combustor exit temperature while utilizing freely available energy from the turbine exhaust. Furthermore, at the time of the invention it would have been obvious to one of ordinary skill in the art to perform the process only until the need for working fluid is present so as not to waste valuable fuel.

Allowable Subject Matter

Claims 1-26, 28-51, 62-66 and 75-85 are allowed.

Response to Arguments

Applicant's arguments with respect to claims 52-61 have been considered but are moot in view of the new ground(s) of rejection.

Reissue Applications

Applicant is reminded of the continuing obligation under 37 CFR 1.178(b), to timely apprise the Office of any prior or concurrent proceeding in which Patent

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No. 6,289,666 is or was involved. These proceedings would include interferences, reissues, reexaminations, and litigation.

Applicant is further reminded of the continuing obligation under 37 CFR 1.56, to timely apprise the Office of any information which is material to patentability of the claims under consideration in this reissue application.

These obligations rest with each individual associated with the filing and prosecution of this application for reissue. See also MPEP §§ 1404, 1442.01 and 1442.04.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Charles G. Freay whose telephone number is 571-272-4827. The examiner can normally be reached on Monday through Friday 8:30 A.M. to 5:30 P.M..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Devon Kramer can be reached on 571-272-7118. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Charles G Freay/
Primary Examiner
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CGF
August 17, 2009